

AMERICAN VETERINARY REVIEW,

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ORIGINAL ARTICLES.

POST-MUSCULAR TRACHEAL ABSCESS. UNSUCCESSFUL TRACHEOTOMY. DEATH.

By W. J. COATES, D.V.S.

On the 31st of May, 1879, a grey mare belonging to a coal merchant of this city was brought to the Hospital of the American Veterinary College, suffering with acute laryngitis of three days standing. When admitted, the respiration was exceedingly difficult and so labored, that, fearing suffocation and while the animal was threatening to fall, the operation of tracheotomy was performed by a longitudinal division of three of the rings of the trachea. The mare recovered, resumed her work about two weeks afterwards, and kept it up until the middle of November, when she was brought back to the college.

She had refused her food the evening before, but having eaten her breakfast that morning, she was put to work. She had gone out a short distance when she was taken with difficulty of respiration and was at once sent up for treatment.

On admission, she was covered with cold perspiration, her visible mucous membranes were bluish, her pulse could not be

felt, her nostrils were widely distended and bleeding quite profusely, the countenance haggard and manifesting probable dissolution unless quick relief should be given.

Preparations were actively pushed for the operation of tracheotomy, but before everything was ready the mare staggered, fell down and stopped breathing.

With rapidity, as was required by the state of the patient, a longitudinal incision was made through the trachea, but it was found that a large tube could not be introduced. It was only with difficulty that the longest and narrowest tube was placed, and artificial respiration begun by pressure of the ribs. For over fifteen minutes the work of respiration was carried on, and was at last rewarded by a sigh taking place at long intervals; these increased in rapidity, and finally an attempt by the mare to raise her head, neck and front legs was made.

Allowing her a little rest to recover from the severe trial she had just passed through, and the respiration remaining yet very difficult and labored, it was found necessary to change the tube. The one she had in was narrow and evidently insufficient to allow a free introduction of air. Tubes of different sizes and of different construction were brought into use, but none were found which could give relief. Some of them seemed in fact perfectly useless, as neither entrance or exit of air could be felt while they were in place.

The finger being introduced into the trachea, the calibre of this canal was found much reduced in size, in fact, so much so that it would scarcely allow the introduction of the little finger. The mucous membrane was swollen and it was feared that this condition of the organ extended all the way down. Above the incision, the trachea was of dark color, somewhat swollen also, although nothing like it was below.

The tube which seemed to give the most relief was then reintroduced and the animal made as comfortable as possible. She died a few hours afterwards.

The post mortem revealed a stricture of the trachea at the part where the original operation was performed, with deformation and extensive calcification, the diameter of the organ being

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then scarcely one and a half inches. Below the point where the second operation was performed existed an abscess, posterior to the muscular coat of the trachea, between it and the cartilaginous rings, pushing the mucous membrane towards the center of the calibre of the organ. It contained about four ounces of bloody suppuration, and filled about five inches of the trachea from the point where it was felt down towards the chest.

The interesting points presented by this rather unusual case, beyond the presence of the abscess, are the lesions of the trachea, which resulted from the first operation, performed in May, and which are evident proofs of the impropriety of performing tracheotomy, except *secundum artem*, by amputation of the half of two rings.

The operation is very simple, unless danger of suffocation is evident; and from the result obtained in this case, it may become a matter of serious consideration whether it would not be better to have the patient well secured, even overlooking temporarily the danger of suffocation, to perform the operation as it ought to be and according to established rules; and if breathing should stop, to have resource to artificial respiration, as it has proved successful in this case. Recovery could not be then threatened by complications similar to those above recorded.

FRAGILITAS OSSIUM.

COMMUNITIVE FRACTURE OF THE PELVIS AND FEMUR.

By W. J. COATES, D.V.S.

A bay mare, ten years old, the property of a grocer of New York City, was brought to the College for treatment. Some two weeks before she had made a slip backwards on the greasy pavement of one of the avenues and had been lame since. She had had a few days of rest, some liniment applied on the fetlock and at intervals light work. Seeing no im-

provement, however, the owner decided to place her under our care.

On admission to the hospital she was found lame on the off hind leg. This was carried in abduction, with a limited flexion at the hip joint. She walked carefully on it, but trotting was, of course, impossible. The ischial region, posterior to the joint, was slightly deformed by swelling, while the measurements between the sacral spine and the external angle of the ilium on the right side was somewhat shorter than that of the left. On rectal examination, a large thickening was detected on the floor of the pelvis to the right side of the median line. In moving the whole extremity, a sensation of crepitation was plainly felt.

Diagnosis: Fracture of the floor of the pelvis posterior to the acetabulum, with incomplete repair.

Prognosis: Unfavorable, on account of the age of the animal and of the length of time since the accident took place.

Treatment was not advised, but the owner requested it, even in presence of the prognosis.

The mare was then placed in slings and immobilized as much as possible. Some four weeks later she was taken from the slings; she walked quite firmly and was anxious to trot. She was then placed in a large box stall to allow her to move about. After a short time she lay down and finding it difficult to get up alone, she was raised. At first she was quite sore and a little lame. She was then secured in the slings again, and left there for a week longer, when, having become restless and full of energy, she was once more let loose.

Some hours after she lay down, and after a short time, tried in vain to get up alone. She was then raised again, and when standing, a fracture of the left femur on the left side was detected. The mare was immediately destroyed.

At the post mortem a comminutive fracture of the femur was exposed, the bone being crushed in the middle of the body in three longitudinal pieces and several smaller ones. The bone was considerably thinner than usual, the compact layer being scarcely more than a line in thickness.

The fracture of the pelvis was repaired. A large callus covered the ischial portion of the floor of the pelvis and the

obturator foramen was so completely closed by the bony deposit that it did not allow the introduction of two fingers; the muscles were pale and atrophied, and the obturator nerve was surrounded by a thick mass of infiltrated plastic material.

EDITORIAL.

PLEURO-PNEUMONIA.

The veterinary profession probably, no less than the agriculturists of America, have been anxiously watching the different reports which at times have appeared concerning this disease, the extent of its existence amongst the cattle of the various States infected, and the results obtained from the measures taken to prevent its spread or to complete its eradication. New York, New Jersey and Pennsylvania have for nearly a year been engaged in carrying out the work by their different Cattle Commissions, and it is to be hoped that the good already done will not be stopped through neglect or oversight on the part of the representatives of the people in the respective Legislatures of those States.

Just how much has been accomplished by these Commissions is not to be determined from the meagre, and usually unofficial, reports which we have occasionally been able to procure. Neither does there seem to be any disposition upon the part of the veterinarians engaged on the various staffs to enlighten the profession either as to the measures enforced or the success which has attended these protracted efforts.

In New York we know from personal observation that much has already been effected, although we are far from being rid of the disease, for but a few days ago an outbreak occurred at Yonkers, a suburb of this city, and Long Island is almost as prolific in its production as she ever has been in the past, while even New York city, we understand, still harbors some infected stables.

The lack of funds to prosecute the work here is, of course, in no wise the fault of the Commission, and it is unfortunate that

their labor should be impeded from this cause when success seemed possible. Restricting the expenditure of money, in this case, to thirty-five thousand dollars, when the disease was known to be so generally prevalent and difficult to deal with, was a grave shortsightedness on the part of our last Legislature, which will postpone the final day of eradication if it does not affect us even more seriously. New Jersey, with her claims to having instituted effective quarantine, has, in spite of these and her defective stamping out process, a full share of diseased animals. The want of money cannot be pleaded there as the cause of any failure which may eventually determine itself. Pennsylvania, judging from an article reproduced in this issue, is also earnestly prosecuting her labors with confidence of future success.

To a sanguine mind that which has been already accomplished might seem indicative of an early relief from further danger, but the critical observer will not forget that inefficient measures and their lax application must indefinitely prolong the presence of the disease in different parts of the country, and then serve to maintain a general danger of infection to the whole country. For years past we have been told by Dr. Thayer, of Massachusetts, that all the Eastern States, with the exception of Connecticut, were entirely clear of this disease, yet on Saturday, the 20th ult., the *New York Times* contained an account of an outbreak in New Hampshire. We are somewhat doubtful as to the reliability of the report, but if it is true, the probabilities are that Massachusetts, surrounded as she is by three infected States, is or may become easily infected, and the stamping out process, effectually adopted some fifteen years ago, may need enforcement again. The simple fact of the matter is, no one knows to what extent the disease is prevalent in our Eastern and Middle States, and the sooner the National Government and the State Legislatures take measures for determining this point, the better will it be for the safety of our live stock interests both at home and abroad. Some of the effects of tampering with such matters is seen in the "penny wise and pound foolish" economy of New York State in appropriating but thirty-five thousand dollars with which to defray the expenses of the Cattle Commission for one year. At

the most important point in the prosecution of their work they come almost to a standstill for want of funds, and not only is there a loss of valuable time, but much that has been gained cannot be kept, simply from a lack of sufficient force to maintain the position.

The duty of the different States in this matter is so plain that no mistake can be made unless it be intentional. Able veterinarians should have charge of the measures that are to be enforced, and they must not be rendered inefficient by presumptuous officials who know nothing whatever of diseases or the means by which they are to be controlled; while sufficient funds are to be supplied by the people's representatives. Congress cannot be ignorant of the importance which the question presents for their consideration, and the people expect and are entitled to some action from this body which shall look to the protection of their endangered interests. The recent petition of the United States Veterinary Medical Association, we believe, indicates the direction which their efforts should take, and the establishing of a National Veterinary Sanitary Bureau of the ablest veterinarians to be found, is a matter that should not be delayed. Until some such measures are taken by the General Government or by every State, the independent action of one State alone can result in but little good, and the time must soon come when contagious pleuropneumonia will be as common and insusceptible of eradication as it is in some European countries.

DIPHThERIA IN PIGS.

Prof. Axe of the London Veterinary College, in the December number of the *Veterinarian*, reports an outbreak of diphtheria in a herd of pigs during the month of September, from which one died, while another was killed for purpose of examination. Regarding the cause of the disease in this instance, none could be determined by the investigations instituted by Prof. Axe.

No fresh stock had been introduced, nor had the pigs come in contact with others, so that infection from immediate contact was not admissible, and the question as to whether the disease

can originate spontaneously, while most interesting—as the above writer suggests—is not as yet determined. The symptoms of the disease are said to have been most characteristic. “The illness was invariably ushered in by shivering. This was quickly followed by swelling of the throat. At first the enlargement was soft and pitted on pressure, but soon became hard and resisting. The breathing was quick at first, and afterwards became embarrassed and was performed with difficulty. Each act of respiration was accompanied with a wheezing sound, and the voice was thick and harsh. In this condition the mouth was opened and the tongue protruded. The gait was stiff and unsteady, and in the more advanced state of the malady dulness and stupor were more or less intense. The eyes and nostrils discharged a mucous or muco-purulent fluid, and the general indications of fever were strongly marked. The lesions observed at post mortem were essentially those of diphtheria, and consisted more especially of infiltration and swelling of the tissues of the neck, tumefaction of the tonsils, and the presence of a dirty-grey granular-looking false membrane on the internal surface of the throat.”

It would have been interesting to know whether the exudation was in patches, involving not only the epithelium but also the submucous tissue, and whether or not there was deep sloughing with proportionate loss of tissue and consequent ulceration. A microscopical examination of the exudate and blood for bacteria, might not have been barren of instructive results. The treatment adopted by Prof. Axe was “the administration of saline aperients followed by antiseptic agents. A complete change of food was also ordered to be made, and the whole of the sties and fixings to be thoroughly cleansed and disinfected. After my visit, the animals all quickly recovered and no further extension of the malady has since occurred.”

PUNCTURING IN FLATULENCE OF THE INTESTINES.

In the last number of the *Veterinary Journal* appeared a very interesting article from Prof. Walley of Edinburgh on “Special Forms of Torsion and Displacement of the Colon in

the Horse, particularly in reference to the cause of death; and the use of the trocar and canula in tympany." He describes three forms of torsion of the double colon which he attributes to three causes: "(1.) By rolling about in the agonies of colic or when turned out to grass, by pitching forward on the nose in attempts to lift a load, or from losing the feet in slippery weather, or by falling over an embankment; (2.) by the powerful contraction of the muscular walls in spasms of the intestines; (3.) by the action of gas (tympany) in the interior of the gut when it is comparatively empty."

The subject of intestinal diseases is one of unusual interest, and Prof. Walley renders the profession an important service in elucidating some of the causes and describing symptoms which accompany the above disease. The author of the article claims further that he is enabled, from the observations which he has made, to unerringly diagnose this condition and consequently to prognosticate with equal accuracy. Regarding the use of trocar and canula in tympanitis, we agree with Prof. Walley that in some instances it offers immediate and permanent relief, while in others it fails entirely. We have seen many of the cases of fermentation which he describes where "the ingesta, fluids and gas form a seething mass." It is particularly apt to occur in some districts as a result of feeding Indian corn, when warm weather first makes its appearance in the spring-time.

In these cases little or no gas is liberated from puncturing, and internal medication must be relied upon for success in treating. Contrary to Prof. Walley's experience, we have seen ill results follow the use of the trocar. We have seen one case in which acute peritonitis caused death, and a post mortem revealed no cause of the disease other than the traumatism. In another instance, we were so unfortunate as to puncture one of the colic arteries, and fatal hemorrhage ensued. Yet, notwithstanding these accidents, we are strongly in favor of the employment of this method of treating tympany, for without it the percentage of deaths would be much greater than now.

RABIES.

The frequent outbreak of this disease in England has been, and is yet, according to reliable testimony, a prolific source of loss to the owners of valuable dogs, and occasionally also of human life. From recent Glasgow and Dublin papers, it would seem that Scotland and Ireland are scarcely more fortunately situated than England, for both human and animal lives have within a few days fallen victims to this dread disease,

That no efforts have been taken by the Government to get rid of such a terrible scourge, does not, perhaps, seem so strange to Americans, who are accustomed to see Government ignore all matters pertaining to veterinary medicine, as it must to veterinarians of continental countries. If the disease was not so extremely fatal, particularly in man, or if there was any known remedy which occasionally would prove efficient as a cure, there might be a seeming excuse for such inaction: but with death resulting in man in every instance and in nearly if not *all* cases in other animals, longer delay in the adoption of suppressive measures must be at the expense of the best interests of the country. The accomplished editor of the *Veterinary Journal* has for months past been urging the Government to take action in the matter, but how long it will be before his recommendations are adopted is a matter of mere speculation.

Fortunately for the United States, rabies is but rarely seen to any considerable extent in this country, never appearing, so far as we are aware, in an enzootic form as it does in England. We have not met a single case in New York for about three years, and we believe but very few cases have occurred here during that time. No doubt one of the principal reasons for our comparative freedom from this malady is the different manner in which our dogs are generally kept, but few packs being found in this country. That we are open to infection from this source, becomes fully apparent when we consider the large number of dogs imported from England yearly; yet, serious as the danger may be, it must ever be much less than where the disease is unknowingly introduced into large packs, as has happened often

in Great Britain. The loss in human life cannot of course be estimated, and it is a matter for regret that so dangerous a disease, capable of suppression, should, contrary to the advice of the ablest veterinarians, be allowed to commit its ravages unchecked.

NOTICE TO ARMY VETERINARIANS.

At the last meeting of the Faculty of the American Veterinary College the following resolution was unanimously adopted :

"On the motion of Dr. Liantard, it was resolved that the gentleman now practising in the army in the capacity of veterinary surgeons have the privilege of attending the courses of lectures of the College on the payment of half fees."

We hope that the resolution will prove of interest to the practitioners in the army who are desirous of completing their studies, but may have been prevented from doing so through want of the necessary means to attend college.

PROFESSIONAL HONORS.

John F. Winchester, B.S., D.V.S., a graduate of the American Veterinary College, class of '78, has been appointed Lecturer upon Veterinary Science in the Massachusetts Agricultural College at Amherst. Having graduated from the scientific department of Amherst College in the class of '75, it is highly complimentary to his professional endeavors that he so soon returns to his alma mater honored with the position of a teacher. We feel confident the opportunities of which he has taken advantage in the past render him competent to give instruction in the course as arranged at Amherst, and we tender him our best wishes for success.

REVIEWS.

THE FARMERS' VETERINARY ADVISER; THIRD EDITION. THE LUNG PLAGUE OF CATTLE, CONTAGIOUS PLEURO-PNEUMONIA.

BY JAMES LAW, F.R.C.V.S., CORNELL UNIVERSITY, N. Y.

The reaching of a third edition of Prof. Law's work at so early a period attests the reception it has met from those for whom it was especially intended. What value it has as a text-book is already so well understood by the profession that comments at this time would seem out of place.

The monograph upon the "Lung Plague," which is bound also with the "Adviser" and constitutes the principal alteration from the previous editions, is published in pamphlet form of 100 pages and contains the author's opinions of the disease as deduced from his recent experience while acting as one of the staff of Cattle Commissioners of the State of New York. The measures adopted by the State for stamping-out the plague have presumably been the same as those recommended in this pamphlet, and will prove of interest to the citizens of New York as well as to the profession generally.

TRANSLATIONS FROM FOREIGN PAPERS.

GOURME; OR, HORSE VARIOLA.

NATURAL AND IRREGULAR FORMS OF THIS DISEASE—INOCULATION AS A PROPHYLACTIC MEANS OF ITS COMPLICATIONS.

By M. L. TRASBOT.*

(Continued from page 370.)

Upon two fillies, abandoned in the hospital of Alfort in 1873, aged six weeks and three months, I practised, before they reached their second year, inoculation with the vaccine taken from a

*Translated by A. Liautard, M.D., V.S.

child. Each had a magnificent generalized eruption. Since that time I have vaccinated them three times without result. They were sold before I could make another attempt.

Upon horses brought to our hospitals for various diseases, I have, almost every year, practised numerous inoculations, from horse to horse and from cow to horse, and I have always met with refractory subjects.

It is certain, then, that while experimenting upon horses of all ages, one will meet with a number and variety of negative facts, no matter by what process the experiments may be conducted. For this reason, I believe other proofs necessary, before accepting as definitive the conclusion of M. Chauveau, viz., that animals, in which the injection of vaccine under the skin or into blood vessels has remained negative, possess, nevertheless, the aptitude to contract the disease, but were protected, however, by this experiment which gave no apparent result.

However, it is now established that the *horse-pox* may be inoculated in horses up to that time virgin of it, by all the processes which have for their first effect to introduce the virus intact into the economy. Besides, from what precedes, it results that the surest process of transmission, as well as the simplest and the easiest, is the sub-epidermic insertion with the lancet. And last, it is also proved, by other experiments of M. Chauveau, that in other species, and the domestic hybrids of the genus *equus*, the facts are the same as in horses.

The mode, so ingenious, of inoculation with the liquid obtained from the surface of the cutaneous pustules of the horse, is not the only one by which one may propagate the disease; there are others, not published as yet, but which by their interest as affecting the history of horse-pox, I may be allowed to mention here.

In a paper addressed to the Central Society of Veterinary Medicine, M. Charles Martin reports that he has succeeded in inoculating gourme by taking the liquid from the nostrils and from the pus of an abscess, introduced under the epidermis of healthy horses. He obtained two negative and twelve positive results out of fourteen experiments.

But a single fact would be sufficient, especially if absolutely

positive, as the one he reported which was characterized by an eruption upon the right cheek, with angiolencitis and sub-glossal abscess, though the inoculations were made on the pituitary mucous membrane.

It is doubtful if M. Charles Martin appreciates all the facts of this experiment; he did not have the idea of assimilating the eruption on the cheek of his subject with *horse-pox*; our readers themselves might think that the experiment does not prove the identity of *gourme* and vaccine: therefore I only present it at this time as a presumptive proof, reserving to myself the opportunity to give, further on, an irrefragable proof of the truth.

As to the two negative results, they may be due to the fact that the pus used in the inoculation was obtained from animals which had passed beyond the period of virulency—a point to be looked into by other experiments.

M. Martin has also succeeded in transmitting horse-variola by a plug of oakum impregnated with muco-pus, carefully rubbed over the nasal membrane.

These results I will discuss in another paper.

And now, to terminate this subject of inoculation of *gourme*, I may briefly mention one of the numerous experiments I made some time ago, to prove that this disease is essentially *horse-pox*, and that it furnishes the vaccine matter.

Last year, a five-year old horse, bought within four or five days, was placed under treatment, presenting the general symptoms of a slight fever, and the special signs of angina; dullness, anorexia, serous and almost transparent discharge from both nostrils, especially the left. In examining attentively, as I always do now, all the surface of the skin, I found under the superior lip first, and then on the ribs and the croup, several small pustules, well marked, which satisfied me that I had to deal with horse-variola, and not with a single inflammatory angina.

I inoculated a cow with the serosity from the nostrils of that horse, with eight punctures on the perineum, and five days later I had eight beautiful pustules. Two days later a midwife of Alfort vaccinated several children with the liquid of one of those pustules, and every child had a superb vaccination, which also

was passed to other children. I had at the same time vaccinated another cow and several pigs with equal success.

I may here say that this last animal is a good subject for the cultivation of vaccine—a long series of experiments authorizes me to make this statement.

But to return to the horse, the subject of these remarks: For several days he ran abundantly at the nose, had a large lymphangitis on the left side of the upper lip, with pseudo-ulceration, three abscesses in the sub-glossal ganglions; in fact, all the symptoms of gourme in its most common form.

What ailed him when I took from his nostrils the vaccinating liquid? Probably, perhaps surely, pustules developing in the nasal cavities, or perhaps in the pharynx or larynx.

This, it seems to me, needs no comment. It is sufficient by itself to prove that gourme is truly the vaccinageneous affection, and that in its essence it is truly *horse-pox*.

Other important questions remain to be considered in relation to the inoculability of gourme. These are: to know how long the liquid exudated on the surface of the respiratory mucous membrane remains virulent; if it is so after it has become purulent; and if the pus of the lymphangitis and of the ganglionic abscesses remains such for a variable length of time. The solution of all these problems I am not yet prepared to announce.

M. Martin; it is true, has transmitted gourme or something like it, to young horses, with the pus of diseased animals; but I do not consider his facts as essentially demonstrative: for it is proved to-day, that inflammatory products are phlogogenous. Placed in contact with healthy tissues, they produce in them inflammatory processes. Here is then, a cause of error when one operates on the horse. In inoculating him, or placing on a portion of his mucous membrane pus from another horse, one cannot be assured that the result will not exceed a simple inflammation.

Specific pustular eruptions alone may furnish a sure proof of the virulency of the liquid employed. To obtain this without fear of confusion, the best ground is the cow virgin of vaccine. It is by a series of experiments executed in this manner, that the

durability of the virulency of gourme can be established. I would advise my colleagues in favorable positions for conducting such experiments, not to neglect their opportunities. These experiments are simple, somewhat tedious perhaps, but of great interest in their relation to comparative pathology, and perfectly harmless to the animals subjected to them.

Again, it remains to be determined whether the dry pus will, like the dry vaccine, as proved by M. Chauveau, transmit the disease. If it were so, there would be a new series of circumstances, under the influence of which an accidental contamination might take place, and which would probably quite overthrow the theory of primitive development.

IV

Let us now consider how the accidental propagation of the disease takes place.

This second part of the question, based only upon observed facts, is no doubt less precise than the other, since all the material, obtained by direct experiment, is simple, very significant, and easily to be reproduced indefinitely. It deserves, however, to be treated somewhat exclusively, as by collecting all observed facts occurring from time to time under their notice, some general data, somewhat exact, can be gathered which may be of some use in the establishment of prophylactic measures.

Considering the facts obtained by clinical observations and by experiments whose results we noticed in the preceding paragraph, we may, in principle, say that the equine virus, placed either in the liquid or powdered form, in contact with an absorbing surface, which could not chemically alter it, will give rise to the disease whenever the organism in which it is so introduced shall be in a condition favorable to its reception. I have no doubt on this point. Whenever the introduction of the intact virus occurs simultaneously with the existence of this aptitude, the disease will develop itself.

The circumstances in which these two necessary and efficient conditions of the transmission of gourme may be realized, are separated into two distinct groups, the first including all those in

which the virulent element is the product of the disease existing in the animal; the second, those in which the virus is exhaled in the form of vapor or impalpable powder, diffused in the air surrounding the affected subject. In other words, there is contagion both by fixed and volatile virus.

In relation to the first, it certainly is demonstrated in an absolute manner by the experiments just related. In all cases, indeed, it consists in a true inoculation, except that instead of being done by design and experimentally, it has been the effect of accident, in a manner occult and often impossible to explain.

The mechanism by which the inoculation may take place, will vary indefinitely and it would be superfluous to examine it all. One of the most ordinary is certainly the immediate contact of diseased with healthy animals, placed in the same stable, eating the same food from the common rack, and in the same feed-box. It is effectively comprehensible that in the condition of both animals, everything is favorably disposed for an inoculation to take place, either because they will rub against each other, or because the sick will drop upon whatsoever they touch, serosity from the pustules, or saliva containing it, or virulent nasal discharge, etc., which may come in contact with the lips and nostrils of the healthy. It is extremely probable, not to say certain, that this is the most common method of the propagation of the disease, and that the so frequent prevalence of the gourmy eruption, almost always confluent, around and inside the nostrils and mouth of horses, may be mostly due to a special condition of the skin of that region.

To prove this, experimental results, more or less significant, might be considered. When a virgin subject has been inoculated, the pustules are always seen more abundant around the points of inoculation, no matter in what region the operation has been performed. I lately collected several similar observations, which with M. Nocard, we followed with much interest. A ten-year old horse was placed under my care for cartilaginous quittor of the right hind foot; he had been placed in a stall alongside of a gourmy patient, which I had examined, and upon which I had just opened an abscess. An instant before, I had performed up-

on him, (the first horse) the operation required by the disease. This operation was performed in the usual way and from the condition in which the tissues left intact were, ought to have terminated satisfactorily.

Five days latter, I was informed that he was very ill. He had eaten nothing since the day before, had an intense fever, a high temperature of 40° C.; his diseased leg did not rest on the ground, was swollen as far as the hock and covered above the dressing by an abundant serosity. Fearing these might be some complications of beginning gangrene towards the articular ligaments, the animal was cast to see what could be done. My surprise was great, upon the dressing being removed, to find that the whole extent of the wound was granulating and healthy. I thought of a possible traumatic erysipelas. A dressing of tincture of aloes was applied, and the patient watched.

Two days later all was explained. The appetite had returned, the animal was lively, and its temperature down to 39° C.; the operated leg, though swollen yet, was resting on the ground, and was covered from the middle of the cannon down to the hoof with a confluent eruption of variola, perfectly manifest. After four or five days the secretion had become so abundant that almost all the epidermis became loose, and, in running the liquid formed little streams flowing down the surface of the hoof. It was a repetition of the case observed by Prof. Bouley. At the same time appeared other less numerous and regular pustules over different parts of the body, the lips and the nasal membrane.

I had no more doubt as to the nature of the disease. I wanted, however, another experimental proof. I inoculated, with the serosity taken from the fetlock, a young calf with about forty incisions made on the skin of the abdomen, previously shaved, and I obtained a magnificent vaccine.

The horse got well and returned to his work on the twenty-sixth day, being able to perform farm work.

What had taken place?

It is easy to understand. After touching the gourmy horse, I had in operating, inoculated with my fingers my subject affected

with quittor, which, no doubt, never had had gourme. I say that he never had it, for a second attack in the general cases when it takes place, never reaches such considerable proportions.

I add that the eruption had been confluent precisely round the parts where the insertion of the virus had taken place, and generalized; but limited everywhere else, even upon the lips and nostrils.

By itself this fact is sufficiently demonstrative. But it was followed immediately by three others exactly alike, which combined have great value as experimental demonstrations.

The horse, whose history I have just given, was thrown a second time, when the equine virus was beginning to be exhaled by the wound of the foot and the surrounding skin, on the 17th of April. Upon three other animals, operated on on the 18th and 30th of April and the 6th of May following, also for cartilaginous quittors, the same phenomena were produced.

How did the inoculation in those last three cases take place, they being in different stables? With M. Nocard I thought it was produced through the medium of the hobbles or instruments used during the operation. What is important, however, is the fact that in all there had been inoculation and confluent eruption in the neighborhood of the points where the virulent product had been deposited.

On the occasion of these four observations, which took place almost simultaneously, I remarked to the students how these facts reproduced the sore heels of Jenner—this quittor, the origin of vaccine, so long looked for! how much, also, at another time, similar facts would be incomprehensible! and how, still, things absolutely obscure at one time, become, on the contrary, clear and easily understood when the questions with which they are connected are ultimately cleared off by good observations and carefully executed experiments.

Evidently here there would be no great credit to see right; but only twenty years ago it would have been otherwise. And how many identical facts, though, perhaps, differing in form, must have taken place without being understood! Was not this disease the same that was observed on the genital organs of the

stallion and mares by Lantour and Dayot, and which, under the name of coital exanthema, was described by Hering, Rychner, Straub and Rœrber? The time between the contaminating coition and the appearance of the pustules, their form, their confluence upon the genital organs and their limited generalization upon the body, and the radical cure of the disease in two or three weeks—all these characteristics leave no doubt that it was horsepox overlooked. This was proved by the experiments of M. St. Cyr. It is not uncommon to meet these eruptions very abundant round the anus of the male and the vulva of the mare during the evolution of gourme caught by any other way. If a mare then be covered by a young stallion, virgin of the disease, he will have a good chance of being inoculated at the penis, and thus to propagate the disease on a large scale. If, again, as it is common, some mares are presented to two stallions, there will be such a multiplication of inoculations that soon a large enzootic will appear similar to those which we read of. Coition then may be considered as a cause of propagation by a direct inoculation. Whether this fact is established or not, what is incontestible is, that it is possible, as long as a specific eruption is found upon the lips of the vulva.

It may take place again by other means. Thus, the tools used for cleaning, for instance, must frequently be the means by which the virus is transported from one animal to several others. The currycomb especially may act so, and particularly, it may be said, will this take place so long as the vaccinagenous lymph is active while liquid and fresh. Also, as proved by M. Chauveau, when the lymph is dry and in a pulverized condition.

Many other accidental inoculations similar to this are unnecessary to be mentioned here.

These different examples are sufficient to give a general idea of all the circumstances under whose influence contagion by fixed virus or accidental inoculation may take place.

Contagion by volatile virus is denied by no one. Even without known facts, one will admit it. All known variola among the different zoological species are transmitted without immediate contact; between animals of the same species equine

variola would be the only exception, if it did not act alike. But numerous facts of transmission by simple cohabitation have furnished long ago the positive proof. There is certainly no practitioner who has not observed it. Whether there is diffusion in the atmosphere of the virus in the shape of vapor or only germs in the state of impalpable dust, the propagation has always taken place without possibility of suspecting an accidental inoculation. Still, I must say that many of the facts which have been named as proofs of this belief, are far from having the probative value that their authors have given to them. What I have said before of the various mechanisms by which, perhaps, an accidental inoculation may take place, will allow me to eliminate a few of them. For myself, in looking during several years for an observation of the kind to which I could not make serious objection, I have found but one which seems to have a real value. It is the following:—

It concerns a colt that I had watched from birth. His dam, aged five years, had been bought, without knowing that she was in foal, seven or eight months before he was born. From his birth he was placed beside her in a box stall in a stable where a dozen horses were kept. Five months later a young horse was placed in the stable, precisely alongside the box where the mother and her little one were kept. Six or eight days after this young horse had horse-pox. He had an abundant discharge, a characteristic eruption on the face and different parts of the body. Several days later the colt, which had never been cleaned or brushed with currycombs or brushes, and which had always been isolated, became also affected, though the mother remained healthy. He had even the most complete attack that one could wish to see: laryngo-pharyngeal angina, pustular eruption, lymphangitis on one cheek, sub-glossal abscess—nothing missing. He, however, was cured.

I repeat, this is the only observation which I think I can consider as free from objection. Still, we are not to infer that it constitutes an entire and absolute proof of the transmission by volatile virus. I only, in fact, consider it as merely establishing a strong presumption, and I believe that others like it

are necessary to establish the certainty of the propagation of the disease at a short distance. At what distance and how long is the disease transmissible? These questions remain without solution so far.

To terminate what is to be said relating to the transmissibility of the disease, I may in a few words say something of the other zoological species to which it has been communicated.

It is inoculable to man, and, since Jenner's discovery, it takes with him for some time, as for ever, the place of its variola proper, whether the virus is taken directly from the horse or if it is first given to the cow, where it becomes vaccine.

It is inoculable to the pig, and acts with it as in the two preceding species. This is the result of numerous experiences, of which I shall say more hereafter.

It may even be inoculated to the dog.

Upon other species than the horse pustules appear only at the points of inoculation, though in man a few rare exceptions are reported. Prof. Parrot has exhibited at the Society of Biology a child on whose arm five or six very small secondary pustules were seen immediately alongside the sides of the larger inoculated ones. He thought they might be the result of an auto-inoculation by the running of the vaccinal serosity upon the skin. However, this has no resemblance to the generalized eruption of the horse.

Generally the inoculation succeeds but once upon the same individual, or, at least, the reproduction takes place only after a long time.

I limit these remarks for the time being only.

Personally I vaccinated myself seven or eight times, always with negative results. It is probably so in the majority of cases.

I never had a second attack among the cows that I inoculated one, two or three years before.

(To be continued.)

CORRESPONDENCE.

THE VETERINARY DEPARTMENT OF THE UNIVERSITY OF IOWA AND ITS CRITICS.

That the University of Iowa has the right to establish a veterinary school cannot be questioned. The Constitution concedes all States the right to educate her citizens in any of the sciences in whatever manner they may see fit. Iowa educates her citizens in veterinary medicine, presumably for her own use, and neither the National Government nor any other outside power has the right to dictate in what manner it shall be accomplished. In so long as the State is satisfied with the teaching done, outsiders can have no influence in securing a change. Seeing, then, that the recent undertaking of this University is entirely legitimate and solely under the control of the people of Iowa, the questions which really interest are: Is the teaching being done there of such a character as to guarantee the making of efficient veterinarians? and, if not, How can we induce a change for the better?

It is hardly to be doubted that Iowa could establish a veterinary school the equal of many of the best now in existence—a school which would produce veterinarians the equals of any of the critics that have recently been decrying this new effort. It in no wise appears that such an institution is uncalled for! The Western States are greatly in need of thousands of veterinary surgeons, and the sooner they are supplied, the quality at the same time being superior, the better it will be for the individual States and for the country as a whole. The University of Iowa *might* supply this great want; let us review her facilities! One critic claims that Ames (the seat of the University) does not offer a proper supply of clinical material to insure efficient teaching; an objection that probably amounts to but little, since Mr. Stalker, in his reply to the same critic, asserts that "hundreds of cases are annually presented at the college" for treatment, etc., which cases could undoubtedly be utilized by the teachers and

made to answer all necessary purposes. The claims of another critic, that a national institute of veterinary medicine should alone teach the science and grant veterinary degrees, is probably true when viewed from his standpoint; but since his position is untenable under our present form of government, discussion of the advantages to be derived from such a condition of affairs is useless. If the dreams of this ideal critic, then, are not capable of realization, must no veterinary schools be established until perfection, as he conceives it, is secured in State or individual efforts?

The fallacy of waiting for presumed perfection in *any* institution must be apparent to all who are acquainted with our country's need of veterinary surgeons and the general quality of the material from which the supply must for many years to come be derived. It is not a wide conception of matters that imagines this country most in want of strictly scientific veterinarians, especially if these scientists are to follow unfortunate examples, and expend their time in a fruitless endeavor to work miracles, to belittle honest work done by their equals, and to object to everything that does not comport with their ideas of right and wrong in the matter of teaching. The class of surgeons needed by the United States at this time are men with thoroughly practical educations founded upon a scientific basis that will guarantee continuous and unlimited growth—men who are capable of rendering aid in the *cure* as well as in the *prevention* of disease; for the importance of the former precedes the latter in the estimation of the public and in the immediate welfare of the diseased. It is these men, with their efficient and conscientious work, who will lead us to something higher, by cultivating in the minds of the public a knowledge of the indispensable value of the veterinarian's skill. "Genius does not grow upon every pair of shoulders," says one critic, and a practical application of this law is that all men are not capable of becoming scientists. But does that exclude them from becoming able veterinarians? If so, then America will never be supplied with a sufficient number of veterinary surgeons, for it is not every genius that will enter the profession. Neither can we look for many geniuses to devote

their time and talents to a science that is not appreciated by the public; for few men are inclined to live a life of hardship and self-denial for a glory they shall never know. That a man must necessarily be a genius to successfully teach veterinary science is not a self-evident truth, as appears to be assumed by the critic quoted from above, yet the vital question which presents itself with regard to the new veterinary school of Iowa is as to whether the University has done the best she could, or even so well as she should, in the selection of her teachers, for upon this fact depends the value of the work done and the efficiency of the veterinarians that are to be made. Of that part of the Faculty which is constituted of physicians, nothing is now to be said, for there can be no question as to their ability to teach some of the branches pertaining to veterinary medicine; but of the one "Veterinary Professor" who advertises to make veterinary surgeons in "two years" of about eight months each, the profession has a right to inquire as to his ability and professional standing. Who is Mr. Stalker that he should set himself up as a "Prof." of veterinary medicine in the University of Iowa? We will see! About six weeks after the opening of the session of the American Veterinary College (winter 1875-6), Mr. Stalker, of Iowa, applied for admission and took out tickets for *part of the course only*. During the last two-thirds of a session, then, he attended the lectures given upon certain subjects and ignored the others, thereby depriving himself of any claim to having attended one prescribed course at this college. According to his own admissions in the July number of the *Review* of 1877, he arrived at Toronto the "middle of November," 1876, where he attended the Veterinary College and received its diploma about the first of April, '77. Did he attend but part of the lectures there as he had done in New York the winter before? Does any surgeon who has a respect for the veterinary profession, or for himself, believe that this was an honorable entrance to a respectable profession? And does Toronto continue to make veterinary surgeons in this same disreputable way? Has the State of Iowa and the profession any guarantee that a teacher who does not scruple to gain entrance to the profession in such a manner will be any

more conscientious in the discharge of his duties toward his students? If the University of Iowa countenances such questionable conduct in its professors, will it be any more desirous of securing efficient teaching of its students?

Is it not rather to be expected that the same "railroading" process will be practiced toward the students that was taken advantage of by the only "Veterinary Professor" in the new school? Will such students be of any value to the people who employ them after graduating? trusting to the respectability of the University of Iowa as sufficient guarantee of their attainments.

It would not require a very great reasoning process, under the circumstances and with the above facts, to deduce the logical conclusion that Mr. Stalker's knowledge of veterinary science is as limited as his respect for the profession, which, if true, renders him utterly unfit to fill the position to which he has been assigned. In the name of an honorable profession, of which I am a member, I protest against this making of veterinary surgeons by institutions that employ as teachers men who have in justice no claim to the degree they assume and who have done much to degrade the profession to which they gained admittance in a manner inconsistent with an honorable self-respect. Upon the same grounds I protest against Toronto, or any other recognized school, granting diplomas to men who have in no wise complied with the requirements of their course as set forth in their annual announcements. It is a prostitution of the good name of the profession to graduate men, no matter how intelligent they may be or where they come from, until they have furnished proof of their right to enter the profession; and that institution which is guilty of such practices is unworthy the patronage of honest men.

Let all colleges that attempt to teach veterinary medicine do so with the honest intent to make honorable, conscientious and efficient practitioners, and the primary step in accomplishing this end must rest in the securing of able, honorable teachers. When any institution fails in this essential particular let us, who respect the profession, hold ourselves aloof from all intercourse with them and their contaminating influence, which would soon bring us to a level with themselves.

The profession can and must maintain its dignity and respect, if it would accomplish any good; and it is not the fault of the rest if a few, who disregard the general interests of all, are treated to the seclusion they have so richly earned.

I am, respectfully,

A VETERINARIAN.

PREPUTIAL CALCULI.

PROF. A. LIAUTARD,

Editor American Veterinary Review.

Dear Sir:—I have this day sent you by express, an accumulation, removed from the sheath of a two-year old steer, which I hope you may find time to analyze, publishing the result in the Review, if of sufficient interest.

I subjoin a brief history of my experience with the disease.—Many cattle are suffering by it in Northern Illinois, and I have failed to find mention of it in any of my veterinary works.

On Sept. 11th, 1878, was called by Abijah Powers, of Prairie Stock Farm, to see some cattle affected with disease of the urinary organs. I was shown seventeen head of one, two and three year old steers, all showing more or less swelling of the sheath, two of them suffering from retention of urine, exhibiting loss of appetite, pulse and respiration hurried, lying down, and disinclined to stand.

An examination revealed the sheath clogged up by a greyish, flakey deposit, which I supposed to be chiefly composed of carbonate of lime and albumen. I removed the accumulation by digging it out with my fingers, afterward injecting carbolic acid one part, to twenty of olive oil. It is needless to say that they speedily recovered from their indisposition. Some of them filled up again afterwards, and the operation had to be repeated.

Since then I have seen perhaps a hundred affected in the same manner, principally occurring through the autumn months.

In yearling steers the accumulations are not so abundant as in older ones, and but few suffer any inconvenience therefrom.—Many drop it in the early part of winter, and then seem free from it until the succeeding fall.

I have seen only steers affected, and under all conditions and circumstances of physical health and various qualities of feed and water.

I have at present three under medical treatment, (from each of which I have removed large masses of the deposit,) to test the value of a preventive medication. One is taking potassa bi tartras; another, tr. ferri chlorid, and the third one hydrocyanic acid. I have just begun, and cannot give the result.

M. R. TRUMBOWER.

Sterling, Ill., Nov. 20, 1879.

A CURIOSITY.

Mr Proffeser Liataend I Was cauled on to See A 4 year Colt Nice Raingey Weight 1130 if in good Condition But Rather thin When I Seen He Was Castrated at 2 yer Old there had 2 other Vetnerys to see the Horse Before I Was Cauld on For my good Luck they Neather one Adminsterd Eny Medisan What Ever So I had Fair Examination of Coarse I Was Boatherd or I Would Not Write this to you I found the Horses Puls 45 and his Breathing Just the Same as his mate By his side in the Stall the horse Had Been Drove on Saterdag & Sondag Monday Morning Eat His Feed Aparently all Right Went to Mowing Horse all Right Monday Night Tuesday Noon Hors Sick trying to Eat Evry Efert useless Chawing hay Not Swaling Eny Chawing Oats Not Swalowing takin in Bran Mashs Not Swaling all this time Water Had Been offerd the Horse in Smaul qantities But the Horse Did not Drink A Drop All thouth he Would Aperiently swalay as the thraught Would mak that Mauvment Neather Did the Watter Run out of the Nose as Would in Depherie or Strangels there Was No Sweld Glands No Swelling in the thraught there Was No Sweling About the Gaw and there Was No Colick No Fever the Legs & Ears Was in good Fealing as Eny Hors Would Bee in good health Standing in the Barn Dooing Nothing this Was on Wendness Day the Horse By this time Was very musch Ganted Begin to look very Bad then I Came give Him Some Linseed Oil to Soften up A Clog as I Sposed I had Found

Close to the Enterance of the Stomach Bowels Regular Euran Stage as Eny Horse I Examand all the teath as I Spose I Would Find the Desease Guiding But Found Nothing Rong With his teath Nor his Tounge Was all Right the Horse had Never Laid Down But Constantly Seamly to Be Starving to Death For Feed and Water Had No Coughf I Gave Him A Pail of Watter and he tried his Best to Drink But I Dont Beleave He Drink one Drop Buy Working all the Linseed oil Down his throught and What I Poured Down his Noase per Haps 2 tabel spoon Full I think after We Ketch Wat Was Wasted We got In him 4 Tabel Spoons Full of oil I used Spt of Namonia as A Plaster on the out Side of the throught and in one hour $\frac{1}{2}$ the Horse Was Some Better But I told the Parties the Hors Would Die About Mid-night and I Would Be there in the Morning and We Would open the Hors But in the Night he Sceamed So Much Better to the Parties When he Was Dieing I Spose they Give him Croten oil and other Medisan So I did not open the Horse and Would have Nothing to Do With the horse A tall Now the young Colt only 4 year old Had not Bee Rais on oats Nor Corn and of Coars this Was a fine Lucsiry and Had Been very Greedy for his grain there is No Choaking talked of much But in my Practice I have Fonnd it But the Peopel are A litle of the Opinion I dont know What Ales the Horse I Want if you Pleas tell me What Ales the Hors Send me Circulars Evry month and I Will Pay you

And I Will visit you Some time I have Had 350 case have lost 14 When one year Had Been Doctord By qacks

I have Study the Horse Since I Was 13 years old I am A German We had to Comence yung My Learning is Betier than I can Discribe to you By Pen I am Now 46 years old and I ask for Explanation this Case hear as A Friend in our Profession I Want you to Side With me and Say the Hors Must of Been Chocked and Caused Infermation in the throught

But tell me true What you think Aled the Hoars

yours Trueley

the Horse Did not Nead No Phisick for His Bowels Was Regular No Relaxation of the Sistam Had taken Place in that Shape

SOCIETY MEETINGS.

MEETING OF THE MEDICAL ASSOCIATION OF THE AMERICAN VETERINARY COLLEGE.

No meeting of this Association was held on the 29th of November owing to the absence of most of the students on Thanksgiving. At the meetings held on the 6th, 13th and 20th of December, the President, Prof. Holcombe, presided, and the following papers were presented: Dec. 6th, "The Different Breeds of American Horses, their Uses and liability to Disease," by Geo. H. Bailey of Portland, Maine; Dec. 13th, "Stimulants *versus* Sedatives," by W. Rose, Jr., Stapleton, N. Y.; and on Dec. 20th, "Bronchitis," by M. G. Mattison, Pittstown, N. J.

The paper presented by Mr. Bailey gave an exhaustive account of the breeds and uses of the many classes of horses at present common to our country, while some interesting facts and experiments relating to the heredity of disease and the breeding of animals are given below.

"Among the many causes of disease to which our domesticated animals are liable, I believe the laws of hereditary descent are the most potent of all the influences that determine the destinies of individuals and of nations. The fundamental laws of descent that have been ascertained by science and experience are that every quality of organic existence tends to be hereditary.

'The brave begotten are by the brave and good.
There is in steer's, there is in horse's blood
The virtue of their sires. No timid dove
Springs from the coupled eagle's furious love.'

"That both parents are concerned in imparting characteristics to their offspring, there can be no doubt. This is fully established in the case of the mule, and it is worthy of notice that the mule is stronger lived and lives longer than the horse; a circumstance anticipated by plants, where hybrids frequently live longer than

their parents. The cause is probably the same in both, and is to be found in their infertility, whereby their whole vigor is left at liberty for self-maintenance instead of being expended in two directions. The spermatic fluid of the mule contains no spermatozoa—a fact that has been established in an interesting manner by Wagner in the case of birds, of which many of those that are domesticated readily cross. The influence of the first impregnation also seems to extend to subsequent ones, and is especially marked in the equine genus. This is illustrated by the well-known case of a thorough-bred mare who was stunted several times to a thorough-bred stallion but always proved barren. She was finally stunted to a quagga, the striped South American animal akin to the zebra, procured from a menagerie for the purpose, and proved in foal to him, producing a striped hybrid. Thereafter she was stunted three times in succession to three different stallions of pure blood, and in each instance gave birth to a striped foal. Phenomena of the same description are so common in the case of bitches of any pure breed that have been accidentally covered by a mongrel, that dog fanciers will not attempt to breed from such as have once borne ignoble or hybrid litters. In the human female, cases are of common occurrence in which the offspring of a widow who has married a second time resembles her first husband. The resemblance of countenance, figure, gesture and even mental qualities are family characteristics we daily observe. Acquired qualities are transmitted, whether they belong to sire or dam, and it is well known by experience that the good or bad points of the progenitors of the sire or dam are almost as likely to appear again in the offspring as those of the immediate parents, in whom they lie dormant. Ethan Allen was a strong case in support of this law. His get were almost universally curby or otherwise unsound; and, while he was himself sound, he transmitted to his colts an unsoundness, that, lying dormant in himself, he had inherited from his dam, who was unsound in many respects. Hence, in breeding, the rule is that 'like produces like or the likeness of some ancestor.' The mare is commonly supposed to be more highly prized by the Arabs than the stallion, but this idea is said to be unfounded by the celebrated

Abd-el-Kadir. He remarks, 'It is true the foal proceeds from the sire and from the dam, but the experience of ages has proved that the essential parts of the body, such as the bones, the tendons, the nerves and the veins, proceed always from the sire. This is beyond all doubt. The meanest Arab knows now that any malady specially belonging to the bones, under which the sire may be suffering at the time of covering, will be perpetuated in his produce—such as splints, bone and blood spavin, the shape of the bones, and all diseases of the vertebral column. The dam may give to her produce color and a certain amount of resemblance in form, the foal naturally partaking of some of the qualities of the animal which had so long borne it; but it is an incontestable fact that it is the sire who gives strength to the bones, substance to the tendons, vigor to the nerves, rapidity of pace, in short, all the principal qualities.' I have seen within my own experience so many curious and convincing proofs of the transmission of disease, that I have come to believe there is scarcely any constitutional defect or habit that cannot be inherited. Breeding "in and in" has always been forbidden by the divine laws. On the other hand, it prevails extensively in a state of nature with all animals, among whom the strongest male retains his daughters and grand-daughters until deprived of his harem by younger and stronger rivals. It has even become well nigh settled that parents can control the sex of their offspring. Going back to some very low orders, it has long been known that the queen bee lays female eggs first and male eggs afterwards; the same is true of the hen and probably of all fowls. A distinguished French veterinary surgeon, Prof. Thiery of the Academy of Science at Geneva, has shown how the sexes may be produced at pleasure. His plan has been extensively tested in Europe with valuable thorough-breds, and they who have fully experimented claim that its correctness is no longer a matter of doubt. Prof. Thiery says if the female be permitted to receive the embrace of the male during the early part of heat, the product (if both animals are healthy and in proper condition as regards their generative functions and secretions) will be a female; but if the female be covered in the latter part of heat, other things

being the same, the result will be a male offspring. Prof. Thierry found that when the ovum was immature, as in the first of heat, the produce would be a female; but where copulation occurred afterwards it would be a male, because the ovum was more fully ripened or matured. In looking over a recent certified report of the Agricultural Society of Canton de Vaud, Switzerland, we find results of a careful testing of this discovery. In all twenty-nine experiments of the new method were made, and in every one they succeeded in the production of what was wanted, male or female, there not being a single failure. The report further says, 'we have visited a number of stock-farms in France, England and Germany, and experiments have been conducted which prove beyond the shadow of a doubt that there is much that can be depended upon in Prof. Thierry's law.'

"To digress and in conclusion, I believe the true practice of veterinary science is yet in its infancy in this country, and that those of us who have availed ourselves of the many advantages afforded by this Institute have chosen wisely a profession in which the harvest is plenty and the laborers are but few. The best estimate of animal losses from preventible or curable diseases is placed at from two to seven per cent.—from forty to two hundred and forty million dollars a year. The loss in the State of New York alone from epizootic abortion in cows has reached as high as ten millions of dollars a year. The vast monetary interests then that will be intrusted to our care, to say nothing of the sympathy and charity we all entertain for every form of suffering, will more than ever call for veterinarians of the highest education and the best attainments. The amount of knowledge necessary is only to be attained by years of study, experience and close observation. Every step that is made toward acquiring this information will render the practitioner so much the more efficient in the discharge of the duties of his profession, and I have a faith and pride in the intelligence and ability of my associates of the junior as well as the senior class, that I think will bear me out in the assertion that a class of men are entering the profession who will drive out the empirics and pretenders who have so long imposed upon the public because of the lack of better men."

THE MONTREAL VETERINARY ASSOCIATION.

The above Association held its regular fortnightly meeting on Thursday evening, the President, Dr. Osler, in the chair, with a fair attendance of members. Mr. J. B. Green described a very interesting case of necrosis of the upper jaw of a horse, resulting from the fracture of a molar by an ignorant quack, in attempting to knock out the wolf teeth. Mr. Green deserves considerable credit in his treatment of the case, as it was necessary to trephine the superior maxillary at the side of the face in order to remove the diseased bone, an operation not unattended with danger, which, however, he avoided, and now the owner rejoices in the possession of a healthy animal, fully recovered from a disease that had baffled the skill of all the local empirics.

Mr. Wm. McEachran read an exhaustive paper on pulmonary tuberculosis in cattle, going fully into the cause, symptoms and pathology of this now unfortunately too common disease; among the more prominent causes he cited the pernicious custom practised by many breeders, particularly of shorthorns, that of in and in breeding. Another cause was confining cows in poorly ventilated stables and giving them food that would produce a great flow of milk, but at the expense of the animal; anything in fact that tended to lower the vital powers, would, he said, if it did not actually cause the disease, render the animal more susceptible to it, and as it was notoriously hereditary, unless proper care was taken it would soon reach such proportions as to make further trifling with it a serious mistake. One question on which he dwelt at considerable length was, whether the disease was communicable to man by eating the flesh of or drinking the milk from affected animals. The great increase of late both of tuberculosis in cattle and the same affection in man in its most common form of pulmonary phthisis or consumption may and probably do have some connection. That the ingestion of the actual tuberculous matter does produce tuberculosis has been abundantly demonstrated, but whether the milk from tuberculosed animals has the same effect the writer was not prepared to decide. The

evidence was not as yet sufficiently conclusive, but was enough to warrant more care than is now exercised in ascertaining the health of our food supply.

The Chair fully agreed with Mr. McEachran as to the infectiousness of the disease, and recommended better supervision of the meat and dairies of large cities.

The Secretary read a letter from Dr. C. C. Lyford, describing a peculiar case in a cow that had been bitten by a dog supposed to be suffering from rabies.

At the next meeting Dr. Bell reads.

After a vote of thanks to Dr. Lyford and the essayists, the meeting adjourned.

EXTRACTS.

PLEURO-PNEUMONIA IN PENNSYLVANIA.

ABSTRACT FROM THE REPORT OF THOMAS J. EDGE, THE GOVERNOR'S AGENT.

Under an Act "to prevent the spread of contagious or infectious pleuro-pneumonia among the cattle of this State," passed May 1, 1879, Governor Hoyt issued a proclamation to owners of cattle, &c., requesting them to report all cases and suspected cases of such disease among neat cattle. Under the same Act the Governor appointed Thomas J. Edge, Esq., Secretary of the State Board of Agriculture, as his agent, invested with authority to carry out the object of the law. The *Record* is indebted to the courtesy of Mr. Edge for advance sheets of his report, from which is taken the following:—

Under the commission before quoted the agent of the Governor has (up to November 1) quarantined twenty-seven herds, including 408 animals liable to infection, and distributed in the following counties: Adams, one; Lancaster, four; York, one; Bucks, one; Delaware, four; Montgomery, five, and Chester, eleven. Of these herds eight (one in York, three in Montgomery and four in Chester) have been since released from the quarantine

and pronounced safe from another outbreak, except from a fresh infection from outside sources. As soon as the supposed existence of the disease is reported, each animal in the herd is inspected by a veterinary surgeon in the employ of the State, and, if the disease is found to exist, is promptly quarantined to prevent its spread to adjoining herds. In order, if possible, to prevent further contagion in the same herd, all diseased animals are appraised and killed.—*Philadelphia Record*.

PLEURO-PNEUMONIA IN NEW HAMPSHIRE.

CONCORD, N. H., Dec. 19.—This disease having broken out among the cattle of James Merrill of Haverhill, in this State, Governor Head called a meeting of the Council to-day and appointed a commission to act at once, as it is deemed necessary, to arrest the spread of the disease. The farmers in that part of the country are greatly excited over its appearance.—*New York Times*.

EXCHANGES, ETC., RECEIVED.

Gazette Medicale (Paris), Recneil de Medecine Veterinaire, Annales de Medecine Veterinaire (Bruxelles), Archives Veterinaires (Alfort), Journal de Zootechnie (Lyons), Clinica Veterinaria (Milan), Revue fur Thierheilkunde und Thierzucht (Milan), Schweizerisches Archiv fur Theirhielkunde (Bern), Veterinary Journal, Veterinarian, Hospital Gazette, Medical Record, National Live Stock Journal, Prairie Farmer, Scientific American, Turf, Field and Farm, American Agriculturist.

JOURNALS.—Philadelphia Record, Gazette of Montreal, Boston Cultivator, Western Rural, &c., &c.